

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL ADJUSTMENT ADMINISTRATION  
WASHINGTON, D. C.

**A GUIDE FOR USE OF SOME CHARTS RELATING TO SOME  
OF THE PROBLEMS OF THE SOUTH**

Issued in the interest of agricultural conservation by the Agricultural Adjustment Administration in Conjunction with the Bureau of Agricultural Economics, Department of Agriculture

In 1937 wall-size copies of 15 charts were distributed in each State of the Southern Region by the Southern Division, Agricultural Adjustment Administration, to each Director of Extension for the county agents of his State and to each vocational agricultural teacher. These charts were designed to give some information with regard to some of the problems of the South.

This booklet is intended to serve as a guide to a better understanding and application of these charts. It consists of a copy and a discussion of each chart. In most cases data are given in addition to that in the charts and should assist in understanding the data in the chart.

This booklet is so arranged that each chart is placed, except in a few instances, on the right-hand page and its respective discussion on the left-hand page. The charts are discussed in the following order and are referred to according to the number designated in the following list, except the two unnumbered charts,<sup>1</sup> following charts 4 and 9, respectively, which were not distributed as wall charts:

1. CPC-1—United States Cotton Statistics.
2. CPC-2—Foreign Cotton Statistics.
3. CPC-3—United States, Foreign, and World Cotton Statistics.
4. CPC-4—Cotton Acreage by Countries.
- A. Cotton Acreage in Foreign Countries and World Price of American Cotton, 1920-37.
5. Big Supplies of American Cotton Depress Price.
6. Farm Prices of and Gross Income From Cotton and Cottonseed and Prices Paid by Farmers for Commodities, 1909-10 to Date.
7. Cotton Consumption and Industrial Production in the United States.
8. Foreign Consumption of Foreign Cotton Increases.
9. Cotton Exports Are Related to Total Imports.
- B. Comparison of Proposed Graduated Tariff Equalization Fee and the Former Processing Tax.
10. Who Will Buy the Surplus? United States Farm Production and Exports.
11. Tobacco, Flue-cured: Production, Stocks, Supply, and Price, United States, 1920 to Date.
12. United States Exports of Farm Products, 1919-20 to Date.
13. Our Foreign Sales Are Limited by Our Foreign Purchases.
14. Supply of Farm Labor and Industrial Employment.
15. Exhaustive Farming Destroys the Land.

<sup>1</sup> These charts have been included because of the current interest in the ideas with which they deal.

## UNITED STATES COTTON STATISTICS

Chart No. 1 is very closely related to each of the following:

- No. 5. Big Supplies of American Cotton Depress Price;
- No. 6. Farm Prices of and Gross Income from Cotton and Cottonseed, and Prices Paid by Farmers for Commodities, 1909-10 to Date;
- No. 7. Cotton Consumption and Industrial Production in the United States;
- No. 8. Foreign Consumption of Foreign Cotton Increases;
- No. 9. Cotton Exports are Related to Total Imports; and
- No. 12. United States Exports of Farm Products, 1919-20 to Date.

The average acreage harvested in the United States during the 10-year period 1928-37 was 35,055,200 acres, while that for the 5-year period, 1928-32, was 40,541,000 acres and for the 5-year period, 1933-37, was 29,569,400 acres.

The weighted average yield per harvested acre for the 10-year period, 1928-37, was 188 pounds, while that for the 5-year period, 1928-32, was 173 pounds, and for the 5-year period, 1933-37, was 209 pounds. The simple averages for the same periods were, respectively, 190, 174, and 206 pounds.

The decrease in acreage during the last 5 years did not bring a proportionate decrease in production, as the average yield per acre for the last 5 years was higher than for the former 5-year period. It is generally believed that a part of this increase in yield has been the result of more intensive culture and of a better selection of cotton land on individual farms.

In spite of the fact that both carry-over and supply of 1933-34 were only slightly below the record carry-over and supply of 1932-33, the average price increased 3.7 cents in 1933-34 over that in 1932-33. The increase in price was the result of several factors in addition to those directly associated with the agricultural adjustment programs. Among these may be mentioned the devaluation of the dollar and the various other programs of relief and recovery.

# UNITED STATES COTTON STATISTICS

## Chart No. 1 (CPC-1)

(All figures in millions except yield and price)

- |  |   |
|--|---|
| Col. 1. Crop year.                           | Col. 7. Farm price per pound.                         |
| Col. 2. Acreage harvested.                   | Col. 8. United States consumption of American cotton. |
| Col. 3. Yield of lint per acre (harvested).  | Col. 9. Domestic exports.                             |
| Col. 4. Production.                          | Col. 10. World consumption of American cotton.        |
| Col. 5. World carry-over of American cotton. |   |
| Col. 6. World supply of American cotton.     |   |

Yr.	Acr.	Yld.	Pro.	C'O.	Sup.	Price	Disposal		
							U. S.	Exp.	Tot.
1	2	3	4	5	6	7	8	9	10
1920-21	34.4	187	13.4	6.3	19.8	15.9	4.7	5.7	10.0
1921-22	28.7	132	7.9	9.4	17.3	17.0	5.6	6.2	12.7
1922-23	31.4	149	9.8	5.2	14.9	22.9	6.3	4.8	12.7
1923-24	35.6	136	10.1	3.3	13.4	28.7	5.4	5.7	11.1
1924-25	39.5	165	13.6	2.7	16.3	22.9	5.9	8.0	13.3
1925-26	44.4	174	16.1	3.4	19.5	19.6	6.2	8.1	13.7
1926-27	44.6	193	18.0	5.5	23.5	12.5	6.9	10.9	15.8
1927-28	38.3	162	13.0	7.7	20.7	20.2	6.5	7.5	15.4
1928-29	42.4	163	14.5	5.1	19.6	18.0	6.8	8.0	15.1
1929-30	43.2	164	14.8	4.4	19.2	16.8	5.8	6.7	13.0
1930-31	42.4	157	13.9	6.3	20.2	9.5	5.1	6.8	10.9
1931-32	38.7	212	17.1	8.9	26.0	5.7	4.7	8.7	12.3
1932-33	35.9	174	13.0	13.0	26.0	6.5	6.0	8.4	14.2
1933-34	29.4	213	13.0	11.6	24.6	10.2	5.6	7.5	13.5
1934-35	26.9	172	9.6	10.6	20.3	12.4	5.2	4.8	11.3
1935-36	27.6	184	10.6	9.0	19.6	11.1	6.2	6.0	12.7
1936-37 <sup>1</sup>	30.0	198	12.4	7.0	19.4	12.3	7.8	5.4	13.2
1937-38 <sup>1</sup>	33.9	265	18.7	6.2	24.9				
1938-39									

<sup>1</sup> Preliminary.

Southern Division, Dec. 1, 1937.



## FOREIGN COTTON STATISTICS

Chart No. 2 is related to each of the following:

- No. 3. United States, Foreign, and World Cotton Statistics;
- No. 4. Cotton Acreage by Countries; and
- No. 8. Foreign Consumption of Foreign Cotton Increases.

The average acreage of cotton harvested in foreign countries during the 5-year period 1927-31 was 42,606,800 acres as compared to 49,164,400 acres for the 5-year period 1932-36.

That foreign cotton production has been increasing for many years is shown by the following summary of the annual average number of bales produced by 5-year periods in all foreign countries (excluding China):<sup>1</sup>

5-year periods	Bales	Percentage increase over previous periods	5-year periods	Bales	Percentage increase over previous periods
1893-97-----	4, 062, 400	-----	1918-22-----	6, 314, 000	- 12. 3
1898-1902-----	4, 522, 800	11. 3	1923-27-----	8, 784, 400	39. 1
1903-7-----	5, 811, 000	28. 5	1928-32-----	9, 234, 200	5. 1
1908-12-----	6, 629, 600	14. 1	1933-37 <sup>2</sup> -----	13, 087, 800	41. 7
1913-17-----	7, 201, 000	8. 6			

<sup>2</sup> The figure included for 1937 is preliminary.

If the consumption of foreign cotton in 1937-38 remains about the same as in 1936-37, the carry-over of foreign cotton at the beginning of the 1938-39 season may be expected to be between 9 and 10 million bales. Then, if foreign countries produce as much cotton in 1938-39 as in 1937-38, the 1938-39 supply will be about 30 million bales.

The increase in production of cotton in foreign countries and other factors have encouraged the foreign mills to use relatively more cotton of foreign growths and relatively less of American cotton.

<sup>1</sup> As reported in the 1938 Cotton Outlook Report of the Bureau of Agricultural Economics, U. S. Department of Agriculture.

# FOREIGN COTTON STATISTICS

## Chart No. 2 (CPC-2)

(All figures in millions except price)

Col. 1. Crop year.

Col. 2. Acreage.

Col. 3. Production.

Col. 4. World carry-over.

Col. 5. World supply.

Col. 6. World consumption.

Col. 7. United States farm price.

Col. 8. World supply of all cotton.

Yr.	Acr.	Pro.	C'O.	Sup.	Cons.	U. S. price	Sup. All
1	2	3	4	5	6	7	8
1920-21	32.0	7.9	4.8	12.8	7.5	15.9	32.5
1921-22	29.2	8.0	4.4	12.4	8.0	17.0	29.8
1922-23	33.5	9.5	4.5	14.0	8.9	22.9	29.0
1923-24	36.2	9.9	3.6	13.5	8.8	28.7	26.9
1924-25	41.3	11.5	3.3	14.8	9.5	22.9	31.2
1925-26	43.4	12.1	3.6	15.7	10.4	19.6	35.2
1926-27	40.1	10.9	4.0	15.0	9.9	12.5	38.4
1927-28	40.0	11.9	4.0	15.9	9.8	20.2	36.6
1928-29	43.0	12.4	4.6	17.0	10.3	18.0	36.6
1929-30	43.3	12.0	4.6	16.6	11.5	16.8	35.9
1930-31	43.1	12.3	5.0	17.3	10.9	9.5	37.5
1931-32	43.5	10.7	4.8	15.6	9.6	5.7	41.5
1932-33	42.6	11.3	4.1	15.4	9.8	6.5	41.4
1933-34	46.8	13.8	4.5	18.4	11.2	10.2	43.0
1934-35	48.8	14.2	5.6	19.8	13.9	12.4	40.1
1935-36	51.9	16.1	4.8	20.9	14.1	11.1	40.5
1936-37 <sup>1</sup>	55.7	18.4	5.2	23.6	16.1	12.3	42.9
1937-38 <sup>1</sup>		20.1	5.6	25.7			50.6
1938-39							

<sup>1</sup> Preliminary.

Southern Division, Dec. 1, 1937.

## UNITED STATES, FOREIGN, AND WORLD COTTON STATISTICS

The cotton-marketing year is generally considered to be the period beginning August 1 to July 31 of the succeeding year. For example, the cotton-marketing year 1920-21 means the period August 1, 1920, to July 31, 1921, inclusive.

Production of a given country is credited to the cotton-marketing year in which most of the country's cotton crop is harvested. For example, in the United States, 1936 production is included in the marketing year 1936-37.

Carry-over is the quantity of raw cotton on hand August 1 from previous crops. Supply, which is the carry-over plus the current crop, is calculated as of August 1 for a cotton-marketing year by adding the estimates of cotton harvested, or to be harvested, to the carry-over.

In the United States comparatively small cotton acreages were harvested in the years 1920 through 1922 and the years 1933 through 1937, while comparatively large acreages were harvested in the years 1924, 1925, 1926, 1928, 1929, and 1930. For the period since 1920-21 there is no definite upward or downward trend in United States cotton acreage. Foreign acreages, on the other hand, show a definite though not constant trend which has been accelerated since 1933. Because of increased plantings in foreign countries world cotton production has been expanded.

The carry-over of American cotton has increased greatly since 1929-30, although production has been fairly uniform. On the other hand carry-over of foreign cotton has been fairly uniform, although foreign production has steadily increased.

Generally, the carry-over of American cotton at the end of a cotton-marketing year is large if production for that year is large, but the carry-over of American cotton is influenced also by business conditions, price relationship and international trade conditions. During the recent years these factors have tended to cause an accumulation of surpluses of American cotton.

While world consumption of all cotton has steadily increased during this period, the increase has been made up almost entirely of foreign growths.



# UNITED STATES, FOREIGN, AND WORLD COTTON STATISTICS

Chart No. 3 (CPC-3)

(All figures rounded to nearest million)

Crop year	Acreage			Production			World carry-over of—			World supply of—			World consumption of—		
	United States	Foreign	All	United States	Foreign	All	Ameri-can	Foreign	All	Ameri-can	Foreign	All	Ameri-can	Foreign	All
1920-21.....	34	32	66	13	8	21	6	5	11	20	13	33	10	7	18
1921-22.....	29	29	58	8	8	16	9	4	14	17	12	30	13	8	21
1922-23.....	31	33	65	10	10	19	5	4	10	15	14	29	13	9	22
1923-24.....	36	36	72	10	10	20	3	4	7	13	13	27	11	9	20
1924-25.....	40	41	81	14	12	25	3	3	6	16	15	31	13	9	23
1925-26.....	44	43	88	16	12	28	3	4	7	19	16	35	14	10	24
1926-27.....	45	40	85	18	11	29	5	4	9	23	15	38	16	10	26
1927-28.....	38	40	78	13	12	25	8	4	12	21	16	37	15	10	25
1928-29.....	42	43	85	14	12	27	5	5	10	20	17	37	15	10	25
1929-30.....	43	43	87	15	12	27	4	5	9	19	17	36	13	12	25
1930-31.....	42	43	86	14	12	26	6	5	11	20	17	38	11	11	22
1931-32.....	39	43	82	17	11	28	9	5	14	26	16	42	12	10	22
1932-33.....	36	43	78	13	11	24	13	4	17	26	15	41	14	10	24
1933-34.....	29	47	76	13	14	27	12	4	16	25	18	43	14	11	25
1934-35.....	27	49	76	10	14	24	11	6	16	20	20	40	11	14	25
1935-36.....	28	52	80	11	16	27	9	5	14	20	21	41	13	14	27
1936-37 <sup>1</sup> .....	30	56	86	12	18	31	7	5	12	19	24	43	13	16	29
1937-38 <sup>1</sup> .....	34	---	---	19	20	39	6	6	12	25	26	51	---	---	---
1938-39.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

<sup>1</sup> Preliminary.

Southern Division, Dec. 1, 1937.

## COTTON ACREAGE BY COUNTRIES

United States, India, China, Brazil, Russia, and Egypt are the major cotton-producing countries of the world. Their future cotton possibilities depend on many factors, some of which are summarized in the following paragraphs:

**United States.**—The United States has been, and still is, the largest cotton-growing country in the world. Since about 1800, the trend in cotton acreage has been upward, although during recent years, there have been indications that this upward trend has been stopped. The United States has suitable land, ample capital, and experienced labor to increase acreage if, and when, the cotton from such increase may be sold at fair prices.

**India.**—Next to the United States, India is the largest producer of cotton. Her highest acreage since 1920–21 was 28.4 million acres in 1925–26.

Although soils in India are reasonably fertile, yields are low, due to unfavorable seasons of rainfall and to the use of the more fertile and irrigated land for the production of food for the dense population. Some of the cotton now produced is grown from American seed stock and is superior to the native cotton and finds a ready market in Europe.

**China.**—Although China has need for a larger production of food, it is apparently her policy to stimulate cotton production to meet the needs of her mills and industries. If the industrialization of China continues, or if industrialization of Japan is meshed with the farming of China, acreage increases may continue. If China continues her expansion of production it is possible that she may become an exporter of cotton.

**Brazil.**—Much of Southern Brazil's cotton crop is of American upland type, having a staple comparable to the bulk of the American crop. Southern Brazilian cotton has entered the old-world markets in direct competition with American cotton.

The rapid expansion of coffee production in Brazil and the competition from other coffee-producing countries resulted in a Government program for the support of coffee prices. With ruinously low prices of Brazilian coffee, coffee growers turned to the production of cotton and much of the capital and labor heretofore directed to coffee production has in recent years been diverted to the production of cotton. Exports of Brazilian cotton to foreign countries has also been stimulated by a government policy of controlled exchange and barter agreements with European countries, particularly Germany.

**Russia.**—Cotton acreage in Russia is largely the result of a government policy which is controlled by conditions within the country. World conditions appear to have but little influence on the size of the Russian crop.

Because of the short growing season in the more northern areas of Russia that have been "ear-marked" for cotton growing there is an impression in the United States that Russia has overestimated her cotton-producing ability. However, information as to this situation is limited. She had expanded acreage and production remarkably in recent years.

**Egypt.**—The 1937–38 cotton crop of 2,053,000 acres in Egypt is the second largest since 1920–21 and increased irrigation facilities will make possible some further additions. However, even with the entire Nile Valley under irrigation a total of only about 8 million acres will be available for agricultural purposes and it is unlikely that more than 2.5 million acres will be planted to cotton.



# COTTON ACREAGES HARVESTED BY COUNTRIES

Chart No. 4 (CPC-4)

(All figures in millions except yield)

Crop year	United States	India	China	Brazil	Russia	Egypt	Uganda	Argentina	Mexico	All others	World
Weighted average yield per acre (1932-36)-----	187	88	210	149	209	461	96	185	237	-----	-----
Largest acreage:											
Prior to 1920-21 <sup>1</sup>	35.6	25.3	( <sup>2</sup> )	1.0	2.1	1.8	0.2	-----	0.3	( <sup>2</sup> )	( <sup>2</sup> )
Since 1920-21---	44.6	28.4	9.5	6.4	5.4	2.2	1.5	0.8	0.8	5.8	87.8
1920-21-----	34.4	21.3	5.5	0.9	0.3	1.9	0.2	0.1	-----	-----	66.4
1921-22-----	28.7	18.5	5.8	1.3	.3	1.3	.2	-----	0.2	1.6	57.9
1922-23-----	31.4	21.8	5.5	1.5	.2	1.9	.3	.1	.3	1.9	64.8
1923-24-----	35.6	23.6	5.4	1.6	.5	1.8	.4	.2	.3	2.4	71.8
1924-25-----	39.5	26.8	5.0	1.9	1.2	1.9	.6	.3	.3	3.2	80.8
1925-26-----	44.4	28.4	5.0	1.5	1.5	2.0	.6	.3	.4	3.7	87.8
1926-27-----	44.6	24.8	5.5	1.4	1.6	1.9	.6	.2	.6	3.5	84.7
1927-28-----	38.3	24.8	6.0	1.4	2.0	1.6	.5	.2	.3	3.3	78.4
1928-29-----	42.4	27.1	5.4	1.4	2.4	1.8	.7	.2	.5	3.6	85.5
1929-30-----	43.2	25.9	6.0	1.7	2.6	1.9	.7	.3	.5	3.7	86.6
1930-31-----	42.4	23.8	6.1	1.7	3.9	2.2	.7	.3	.4	4.0	85.6
1931-32-----	38.7	23.7	5.6	2.0	5.3	1.7	.9	.3	.3	3.6	82.2
1932-33-----	35.9	22.5	6.8	1.7	5.4	1.1	1.1	.3	.2	3.6	78.5
1933-34-----	29.4	24.1	6.7	2.9	5.1	1.9	1.1	.5	.4	4.2	76.2
1934-35-----	26.9	24.0	7.1	4.1	4.8	1.8	1.2	.7	.4	4.8	75.7
1935-36-----	27.6	26.0	6.2	5.2	4.8	1.7	1.4	.8	.6	5.2	79.6
1936-37 <sup>3</sup> -----	30.0	25.2	8.4	6.4	5.0	1.8	1.5	.7	.8	5.8	85.7
1937-38 <sup>3</sup> -----	33.9	24.3	9.5	-----	5.2	2.1	-----	-----	-----	-----	-----
1938-39-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

<sup>1</sup> Largest acreage prior to 1920-21 in the United States, 1914-15; India, 1917-18; Brazil, 1914-15; Russia, 1916-17; Egypt, 1914-15; Uganda, 1919-20; Mexico, 1909-10.

<sup>2</sup> Not available prior to 1920.

<sup>3</sup> Preliminary.

Southern Division, May 18, 1938.

## COTTON ACREAGE IN FOREIGN COUNTRIES AND WORLD PRICE OF AMERICAN COTTON, 1920-37

During the past 18 years the price of American cotton has had a most violent history and has pursued a downward trend. Yet the response of foreign cotton acreage to price changes has been different in almost every country, with some countries showing no apparent response to the drop in price from around 30 cents in 1923 to less than 5 cents in 1932. In each country there are other factors besides the price of American cotton that help determine the acreage planted to cotton.

The total acreage in the four countries, China, Russia, Brazil, and Uganda increased almost continuously from 1921 to 1927, in spite of the fact that between 1923 and 1926 the world price of American cotton was reduced by more than 50 percent. These facts suggest very clearly that if, for example, the price of American cotton had been kept at 6 cents in 1933, it would not necessarily have prevented the rapid expansion in countries where expansion had been planned and where governments through monetary and trade policies have cushioned their domestic prices against low prices of American cotton.

Russian cotton and a good part of Chinese cotton have so far not been competitive with American cotton. Russia and China have been absorbing practically all of their expanded production. If expansion continues, it is likely that in the near future both of these countries will be more competitive than they have been in the past.

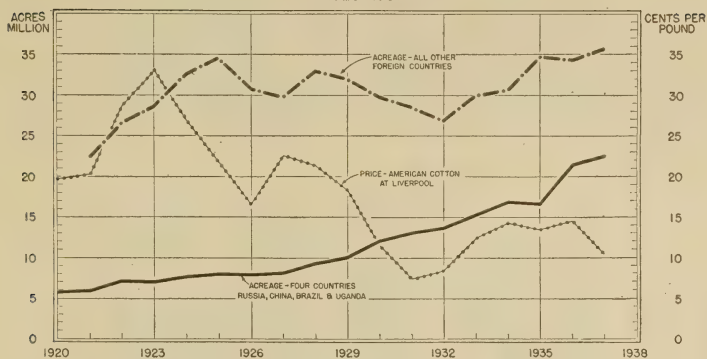
The chart and the following table show significant facts regarding foreign cotton expansion—significant from the standpoint of the proposal sometimes made that we should check foreign cotton expansion by subsidizing exports:

Year	Acreage, 4 foreign countries <sup>1</sup>	All other foreign coun- tries	Price per pound of Ameri- can cot- ton in Liver- pool	Year	Acreage, 4 foreign countries <sup>1</sup>	All other foreign coun- tries	Price per pound of Ameri- can cot- ton in Liver- pool
	Million acres	Million acres	Cents		Million acres	Million acres	Cents
1920-----	5. 8		19. 73	1929-----	10. 1	32. 0	18. 44
1921-----	5. 9	22. 4	20. 19	1930-----	12. 1	29. 8	11. 61
1922-----	7. 1	26. 6	28. 70	1931-----	13. 0	28. 5	7. 54
1923-----	7. 0	28. 7	32. 99	1932-----	13. 7	26. 9	8. 52
1924-----	7. 6	32. 7	27. 09	1933-----	15. 2	30. 0	12. 47
1925-----	7. 9	34. 6	21. 82	1934-----	16. 9	30. 7	14. 24
1926-----	7. 8	30. 8	16. 57	1935-----	16. 7	34. 7	13. 50
1927-----	8. 1	29. 8	22. 65	1936-----	21. 5	34. 2	14. 62
1928-----	9. 3	33. 0	21. 36	1937-----	22. 6	35. 7	10. 50

<sup>1</sup> Russia, China, Brazil, and Uganda.

# CHART NO. A

COTTON ACREAGE IN FOREIGN COUNTRIES AND WORLD PRICE OF  
AMERICAN COTTON  
1920-1937





## BIG SUPPLIES OF AMERICAN COTTON DEPRESS PRICE

The supply of American cotton is the sum of the carry-over from previous crops plus the current crop production. The black section of each bar of the chart represents production and the striped section of each bar represents the carry-over from the previous season.

It is obvious that the trend in price is in the opposite direction from the trend in total supply of American cotton. In other words, as the supply rises, the price falls; and as the supply falls, the price rises.

The following table shows how this has operated from 1920-21 to date:

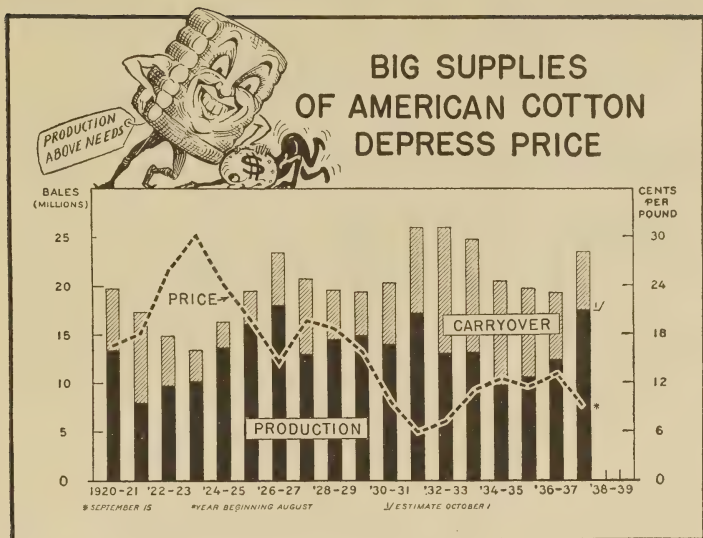
Year	Supply of American cotton	United States price	Direction of change in—	
			Supply	Price
	<i>1,000 bales</i>	<i>Cents</i>		
1920-21	19,767	15.9		
1921-22	17,338	17.0	Down	Up.
1922-23	14,917	22.9	Down	Up.
1923-24	13,444	28.7	Down	Up.
1924-25	16,335	22.9	Up	Down.
1925-26	19,491	19.6	Up	Down.
1926-27	23,473	12.5	Up	Down.
1927-28	20,652	20.2	Down	Up.
1928-29	19,591	18.0	Down	Down.
1929-30	19,234	16.8	Down	Down.
1930-31	20,219	9.5	Up	Down.
1931-32	25,965	5.7	Up	Down.
1932-33	25,963	6.5	Down	Up.
1933-34	24,635	10.2	Down	Up.
1934-35	20,270	12.4	Down	Up.
1935-36	19,647	11.1	Down	Down.
1936-37	19,354	12.3	Down	Up.
1937-38 <sup>1</sup>	24,946	<sup>2</sup> 8.4	Up	Down.

<sup>1</sup> Preliminary.

<sup>2</sup> Average for season to Dec. 1, 1937.

These data show the relationship between the supply of American cotton and the price. American cotton in the next few years will not have the effect on price that it has had in the past, since the supply of foreign cotton is now nearly twice as large as in the 1920's, and, consequently, represents a larger percentage of the total supply, also since a much larger proportion of the foreign crop is similar in quality to the bulk of the American crop, and since present-day spinning equipment makes it easier than formerly for spinners to shift from one growth to another.

CHART NO. 5



## FARM PRICES OF AND GROSS INCOME FROM COTTON AND COTTONSEED AND PRICES PAID FOR COMMODITIES, 1909-10 TO DATE

The economic position of the farmer is dependent in a large measure upon the prices he pays for goods and services, and upon prices he receives for products of the farm. Cotton and cottonseed are the major source of cash income on many southern farms, and their exchange value largely determines the economic welfare of many farmers.

Index numbers show relationships. By their use one may get a common measure of things that are quite different. To use index numbers for measuring relationships and changes in relationships it is necessary to have a base. The base for the relationships shown on this chart is the period from August 1909 to July 1914. The average prices and average gross incomes of this base period are given the index number 100. For example, the average price of lint cotton for this base period was 12.4 cents a pound. Therefore, 12.4 cents=100. When cotton sells for 6.2 cents a pound the index number of the price of cotton is 50.

In order to aid in understanding this chart, the following explanation is given:

The commodities farmers buy are divided into two groups: (1) The items used in farm production; (2) items used in family consumption. They are further classified into subgroups to show changes in prices of certain classes of commodities.

The commodities bought for farm family consumption have been subdivided into food, clothing, operating expenses, furniture and furnishings, building materials for the home, and automobile for the family.

The commodities bought for use in farm production have been subdivided into feed, farm machinery, automobile, trucks, tractors, fertilizers, building materials other than for the home, equipment, supplies, and seed. Price changes alone do not measure the economic position of the farmer. Changes in quantities of goods purchased and changes in quantities of cotton and cottonseed sold are also significant factors.

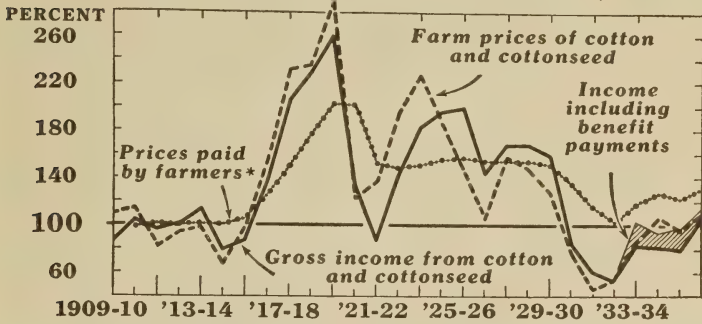
During the period 1909-10 to 1936-37 prices received by farmers for cotton and cottonseed have fluctuated much more violently than prices paid by farmers for commodities purchased. Between 1917-18 and 1919-20, and again between 1923-24 and 1924-25, the "purchasing power" of cotton and cottonseed was favorable because of relatively high prices and high gross income, but except for these two brief periods the cotton farmer has operated at a disadvantage.



# CHART NO. 6

## Farm Prices of and Gross Income from Cotton and Cottonseed, and Prices Paid by Farmers for Commodities, 1909-10 to Date<sup>△</sup>

INDEX NUMBERS (AUG. 1909 - JULY 1914=100)



<sup>△</sup> YEAR BEGINNING AUGUST

\* 1910-14=100, CALENDAR YEAR, 1910-22

## COTTON CONSUMPTION AND INDUSTRIAL PRODUCTION IN THE UNITED STATES

The index for industrial production is constructed from the relative industrial output for 12 individual industries as follows: Iron and steel products, 23 percent; textile products, 20.5 percent; food products, 10.1 percent; paper and printing, 11.2 percent; lumber products, 9.9 percent; transportation equipment, 6.7 percent; leather and manufactures, 4.0 percent; stone, clay and glass products, 3.9 percent; metal products other than iron and steel, 4.0 percent; chemical products, 3.8 percent; rubber products, 1.8 percent; and tobacco manufactures, 1.1 percent.

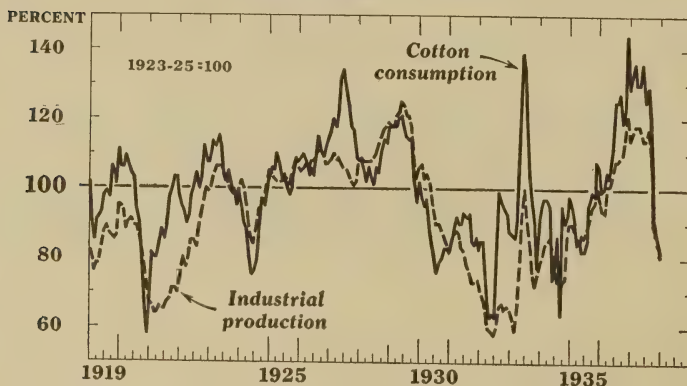
Although there are times when cotton-mill activity is at a higher level than industrial activity, as in 1927 and 1933, it is obvious that cotton consumption and industrial production in the United States are closely related.

Cotton farmers are interested in having industry maintain a high level of production because the consumption of cotton is determined to a great extent by the rate of industrial employment. This is true not only because industrial workers are in better position to buy cotton clothing, but because a great deal of cotton is consumed in the manufacture of industrial products. For instance, in the manufacture of a passenger automobile tire almost 4 pounds of cotton are consumed, while more than 31 pounds are consumed in a heavy truck tire.<sup>1</sup>

<sup>1</sup> United States Department of Agriculture, Bureau of Agricultural Economics, Cotton Used in Tire Fabrics, October 1937.

### CHART NO. 7

#### Cotton Consumption and Industrial Production in the United States



## FOREIGN CONSUMPTION OF FOREIGN COTTON INCREASES

Since the beginning of the World War there has been a definite upward trend in the foreign consumption of cotton, which is accounted for almost entirely by increases in the consumption of foreign staples. As a matter of fact, since about 1927-28 there has been a noticeable decline both in the amount and in the percentage of American cotton entering the ports of foreign manufacturing centers. Some of this loss in the foreign market for American cotton may be attributed to the growing spirit of nationalism which spread rapidly following the war. Other reasons are:

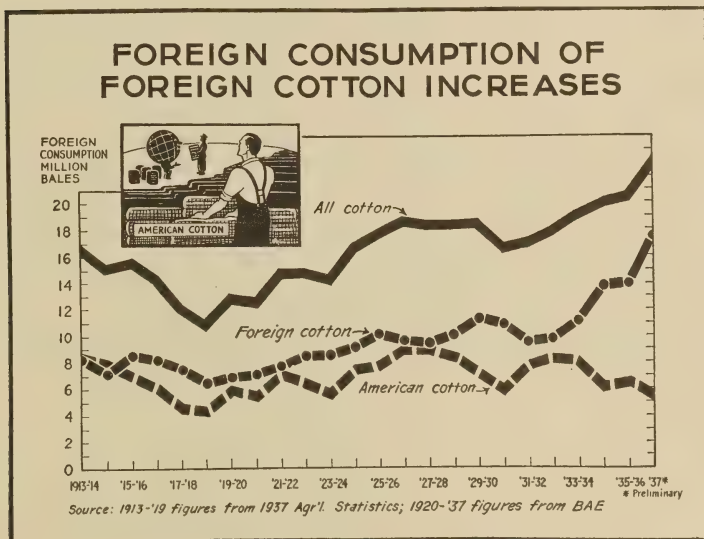
(1) Expansion of textile industries in Russia, China, and India. These countries have increased the consumption of their own cotton.

(2) Successful utilization by the Japanese textile industry of lower qualities of cotton in cloth which they now export to markets that were formerly supplied by European manufacturers using another staple. Their skillful methods in mixing and blending growths of cotton of a wider range of staple length than those used in other cotton textile manufacturing countries, have stimulated the mixture of other growths with American cotton.

(3) Foreign consumption and exports of American cotton, in common with other commodities, are restricted by the tariff wall and foreign trade has been made more difficult by the fact that the United States is now a creditor nation.

A study of this chart in connection with carry-over and production figures indicate that foreign consumption of foreign cotton has kept pace with rapidly increasing foreign production and that stocks of foreign cotton have not piled up. On the other hand, consumption of American cotton has not kept up with American production and the carry-over of American cotton has tended to increase.

CHART NO. 8





## COTTON EXPORTS ARE RELATED TO TOTAL IMPORTS

This chart shows that the general trend of United States cotton exports has been very much like that of total United States imports. This would lead one to conclude that an increase in our total imports would tend to increase our cotton exports. As shown in connection with the chart (No. 13), Our Foreign Sales are Limited by Our Foreign Purchases, increased imports tend to increase exports. This is of special importance to cotton farmers since cotton is our largest single export commodity.

During the five years, 1932 to 1936, cotton made up 18 percent of the total value of our exports of all commodities. Its share in our exports to our five leading foreign markets during certain recent years is compared with that of certain other leading export items in the following table:

*Percent that the value of cotton and other goods were of the total value of United States exports to 5 countries<sup>1</sup>*

Commodity	1929	1932	1934	1935	1936
Cotton, raw-----	31. 5	38. 3	31. 3	31. 2	30. 7
Oil and oil products-----	11. 2	12. 6	10. 5	11. 3	11. 3
Industrial machinery-----	3. 0	2. 6	3. 1	3. 1	3. 8
Automobiles and parts (excluding engines)---	3. 6	1. 6	2. 3	2. 6	2. 4
All others-----	50. 7	44. 9	52. 8	51. 8	51. 8
Total-----	100. 0	100. 0	100. 0	100. 0	100. 0

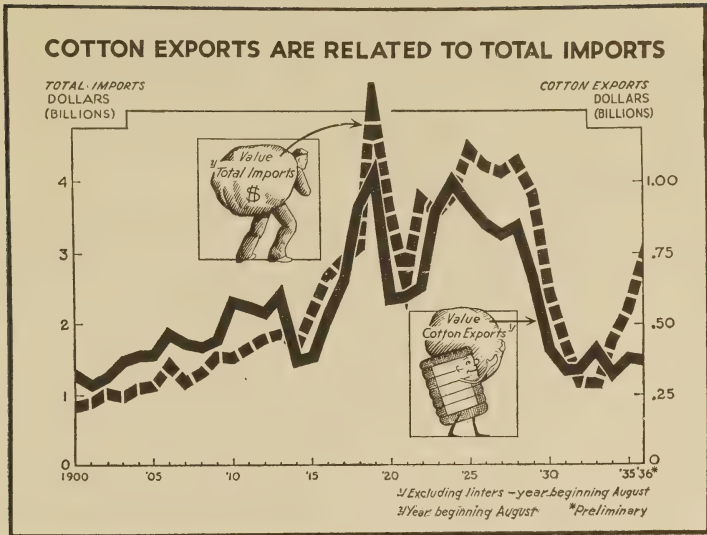
<sup>1</sup> United Kingdom, France, Germany, Italy, and Japan.

Compiled from Foreign Commerce and Navigation of the United States and official records of the Bureau of Foreign and Domestic Commerce of the Department of Commerce.

The trade agreements program of the United States attempts to increase both exports and imports by liberalizing trade policies both in the United States and in foreign countries. Exports to trade agreement countries for the years 1936 and 1937 increased by an average of 42 percent over exports to the same countries in 1934 and 1935, prior to the effective date of most of the agreements. On the other hand, exports to non-trade-agreement countries increased only 26 percent for the same period. The corresponding increases in imports were 45 percent and 51 percent, respectively. A large part of the increase in value of imports was due to higher levels of industrial activity in 1936 and most of 1937, and to consequent increased demand and higher prices for raw materials. Shortages of corn, wheat, and other agricultural products, following the drought of 1936, contributed to the increase in imports in 1936 and 1937.

If the United States is to export increasing quantities of agricultural and industrial products, it must, as a creditor country, be prepared to accept even larger imports of goods and services from abroad.

CHART NO. 9



## COMPARISON OF PROPOSED GRADUATED TARIFF EQUALIZATION FEE AND FORMER PROCESSING TAX

Senator Pope, of Idaho, recently proposed a new type of processing tax in the form of a tariff equalization fee. The tax is graduated by yarn counts. It was modeled after the tariff rate structure. In addition to following the pattern of tariff rates, it was believed that such tax, being lower on the coarser counts would eliminate criticism that the tax was higher in proportion to the selling price per yard of coarse goods than per yard of fine goods.

The table below shows the comparative rates for various constructions of cotton cloth, while the chart shows the comparative rates for carded and combed yarns. In each case the Pope proposal for a graduated tariff equalization fee is compared to the former processing tax. The table also gives the minimum specific tariff rates for the same cotton cloth constructions as established by the Tariff Act of 1930. As indicated in the chart, the former cotton processing tax of 4.2 cents per pound was equivalent to 4.70 cents per pound on carded yarn and 5.08 cents per pound on combed yarn of all counts, while the rates under the Pope proposal begin at 0.5 cent per pound for number 1's yarn and increase at the rate of 0.2 cent per pound for each yarn count up to and including number 11 yarn on which the rate is 2.50 cents per pound. Thereafter, the rates increase at 0.1 cent per pound per yarn count up to 46's, on which the tax is 6 cents per pound.

The approximate amount of tax on certain specified types of cotton goods on the basis of the Pope proposal is shown in the following table:

Item	Specification		Approximate cents per pound of cloth		
	Yards per pound	Approximate average count of yarns used	Tariff (minimum specific) <sup>1</sup>	Tariff equalization fee at rates in the Pope proposal	Processing tax at 4.2 cents per pound net weight of raw cotton
<b>Carded:</b>					
Osnaburg-----	2. 05	8	4. 40	<sup>2</sup> 1. 90	<sup>2</sup> 3. 78
Sheeting-----	2. 85	14	7. 70	2. 76	4. 63
Do-----	4. 00	19	10. 45	3. 25	4. 63
Do-----	5. 50	23	12. 65	3. 64	4. 63
Drill-----	3. 95	20	11. 00	3. 33	4. 61
Pocketing twill-----	2. 58	21	11. 55	3. 43	4. 61
Print cloth-----	4. 00	33	18. 15	4. 51	4. 52
Broadcloth-----	4. 10	32	17. 60	4. 39	4. 49
Three leaf twill-----	4. 00	30	16. 50	4. 31	4. 61
<b>Combed:</b>					
Broadcloth-----	4. 40	42	23. 10	5. 47	4. 96
Voile-----	8. 22	50	27. 50	6. 17	5. 22
Lawn-----	9. 00	70	38. 50	5. 98	5. 07

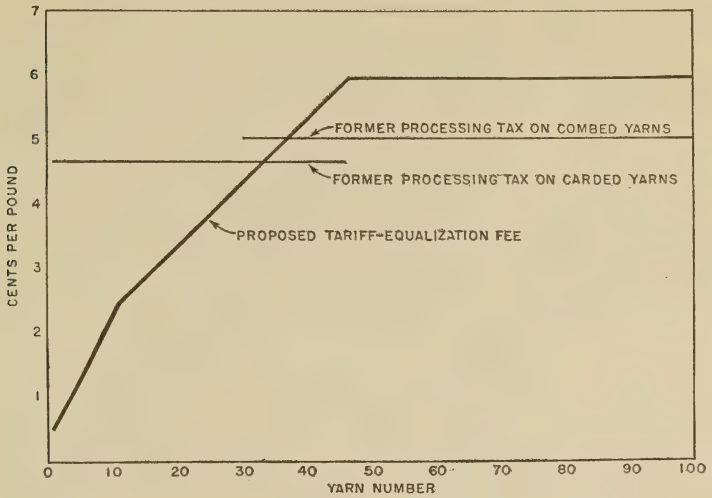
<sup>1</sup> Based on the Tariff Act of 1930.

<sup>2</sup> Made in part (50 percent) from cotton waste.

Although the rates for the finer yarn counts are higher under the Pope proposal than the equivalent of the former processing tax, the average rate under the Pope proposal for all cotton consumed in the United States would be slightly lower because of the large production of coarse and medium count yarns. Both rates are, as shown in the above table, well below the minimum specific tariff rate.

## CHART NO. B

### COMPARISON OF PROPOSED GRADUATED TARIFF-EQUALIZATION FEE AND FORMER PROCESSING TAX





## WHO WILL BUY THE SURPLUS? UNITED STATES FARM PRODUCTION AND EXPORTS

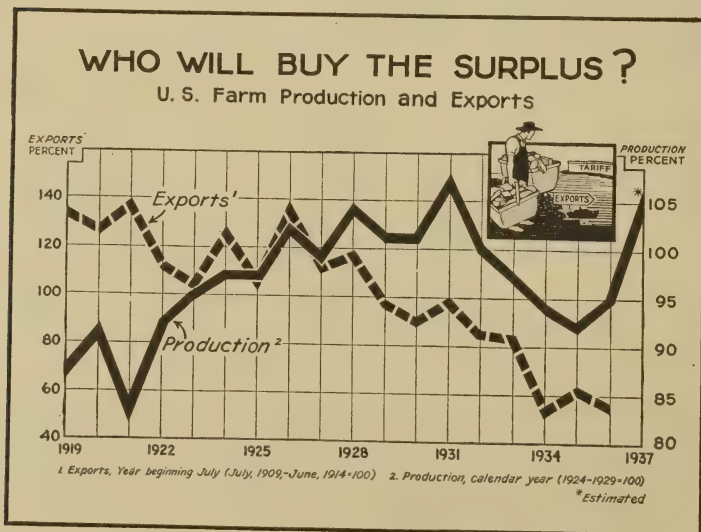
The recent trend in United States exports of farm products has been downward while that in United States production of farm products has been upward.

The war caused an increase in the foreign demand for United States farm products, and this demand was continued at about this new level until well into the twenties. This led to an increase in production, made possible on an unusually large scale by (1) the invention of labor-saving farm machinery, (2) the adoption of improved farming methods, and (3) an increase in the acreage planted. The high levels of production continued after the war demand had disappeared.

This situation was aggravated by a further decrease in foreign demand. Much of this has been due to efforts made by foreign countries to expand their acreage by means of various sorts of subsidies and import restrictions. The leading foreign agricultural regions (Europe, Russia, Canada, Argentina, and Australia) had a combined pre-war crop acreage of about 625,000,000 acres. At the close of the war this had been reduced by about 15 percent. By 1925 it had been restored very close to the pre-war level. In 1930 the figure had risen to 700,000,000 acres, and some expansion has continued to take place.

The peak year of our post-war agricultural production was 1931. Since then the situation has been relieved by unfavorable weather conditions, and in a large measure to the agricultural programs of the Agricultural Adjustment Administration. A year of favorable seasons in 1937, however, brought production back to the 1931 level and again brings to the forefront the question of "Who will buy the surplus?" Hence, we are again facing the problem of an agricultural surplus.

CHART NO. 10



## FLUE-CURED TOBACCO: PRODUCTION, STOCKS, SUPPLY AND PRICE, UNITED STATES, 1920 TO DATE

In the United States flue-cured tobacco is grown mainly in Virginia, North Carolina, South Carolina, and Georgia. In foreign countries flue-cured tobacco is produced mainly in China, Japan, Canada, Southern Rhodesia (Africa), and Chosen (Korea).

Flue-cured tobacco, at the present time, is used very largely for manufacturing cigarettes, although an important percentage is used for manufacturing smoking tobacco.

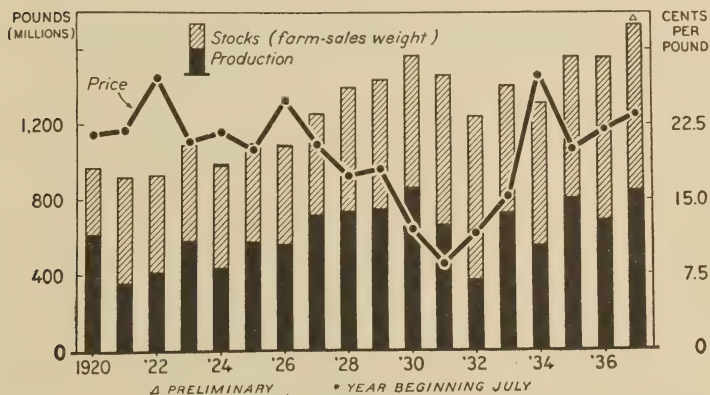
Per capita consumption of all tobaccos showed an upward trend from 1900 to 1917. Since that time changes in per capita consumption have reflected major changes in economic conditions. For example, the moderate depression of 1921-22 and the major depression which began in 1929 brought corresponding decreases in per capita consumption of tobacco. Except for the two periods noted, the increase in cigarette consumption has been continuous, so that flue-cured tobacco now represents more than half of the total tobacco produced in the United States.

"Supply" represents stocks plus the production for the current year. "Stocks" means the quantity of leaf on hand in the United States on July 1. The tobacco year begins July 1 and ends the following June 30. The volume of stocks on hand at the opening of a marketing season is one of the important price-determining factors.

Normally, a change in the supply of flue-cured tobacco results in a price change in the opposite direction. This is demonstrated in nearly all of the years included in the chart but may be modified by significant changes in economic conditions or other factors. For example, in 1931 the price declined notwithstanding a decrease of supply; in 1933 the price increased although the supply was larger than in 1932, and in 1934 the increase in price was out of proportion to the moderate decrease in supply. Important factors in these years were substantial changes in demand and, in 1933 and 1934, effects of programs of the Agricultural Adjustment Administration.—*Quotation from G-63, Flue-Cured Tobacco, Questions and Answers:*

### CHART NO. 11

#### Flue-cured Tobacco: Production, Stocks, Supply, and Price, United States, 1920 to Date \*



## UNITED STATES EXPORTS OF FARM PRODUCTS, 1919-20 TO DATE

United States exports of farm products, as measured by an index of 44 leading commodities, have declined almost continuously since 1919. The important quantity decline has taken place more or less steadily since 1926. The greatest declines in value took place when prices fell in 1921 and again in the late depression. Value has declined more than quantity, even by comparison with the predepression years.

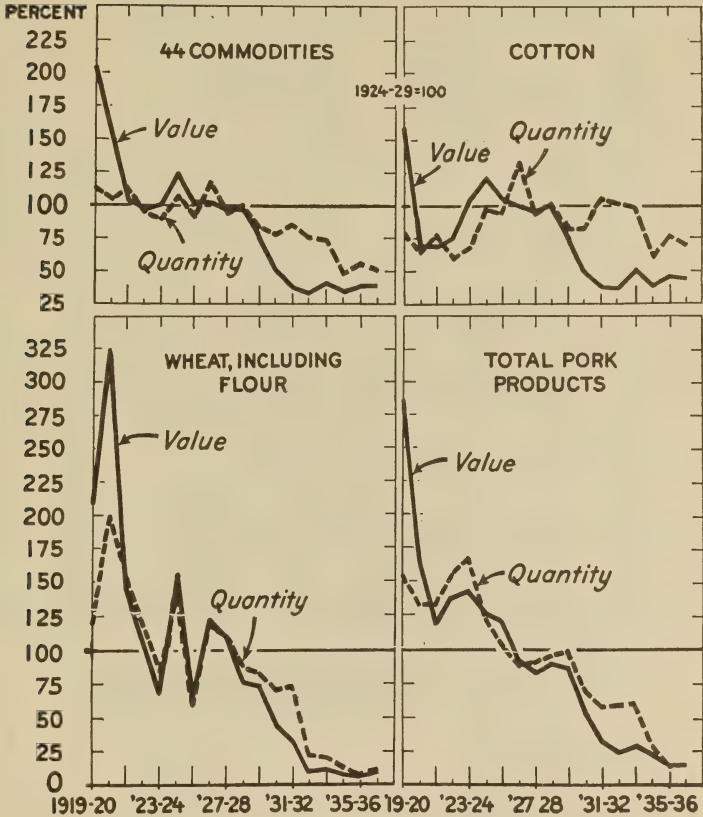
Cotton exports have declined relatively less than those of other products. This does not show up strikingly in comparison with the 44-commodities index because cotton figures are the greatest single factor influencing that index. In 1910-14 they made up 57 percent of the 44 commodities in the index and were 53 percent of our total agricultural exports during the 5 years 1932 to 1936. The balance of the index is made up of the following five groups: Grains and grain products (15 percent), cured pork and lard (11 percent), tobacco (5 percent), fruits (2 percent), and miscellaneous products including several dairy products (10 percent).

The fact that cotton exports have declined less rapidly than those of certain other products appears clearly, however, when a comparison is made with exports of wheat and pork products. Each of these has declined to less than 25 percent of its predepression level.

An important factor which has limited the value of exports (both agricultural and industrial) is the decline in the value of total imports. For further information of this question, see discussion in connection with the charts entitled "Cotton Exports are Related to Total Imports" (No. 9), and "Our Foreign Sales are Limited by Our Foreign Purchases" (No. 13).

# CHART NO. 12

## U.S. Exports of Farm Products, 1919-20 to Date





## OUR FOREIGN SALES ARE LIMITED BY OUR FOREIGN PURCHASES

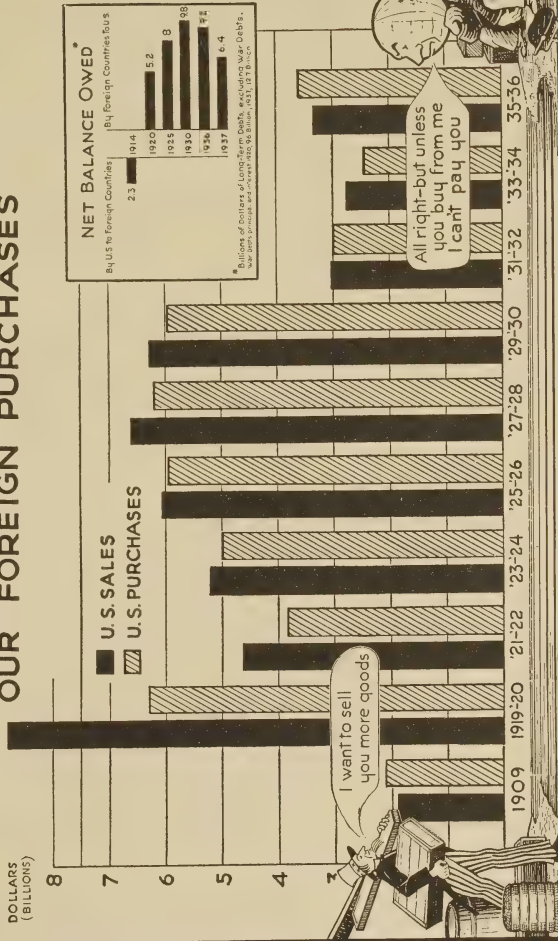
The chart shows, by 2-year averages, the total amount of sales and purchases of commodities and services between the United States and the rest of the world since the War, with a comparison for the year 1909. It is to be noticed that, except in years when heavy credits are extended to foreigners, the sales and purchases go up and down together.

To the degree that the United States buys, it is able to sell. Foreign countries must have dollars with which to purchase United States goods. They can get those dollars only from the United States. The principal way in which they get them is by selling us goods. As a result, United States imports and United States exports have followed each other very closely in value throughout the history of our country.

Other ways in which foreigners can obtain dollars from the United States include loans by Americans to foreigners, services such as those rendered by foreigners to American tourists, and gold sent to the United States from abroad. None of these items has ever been large enough to replace imports of goods into the United States. Even during the 1920's when we were lending abroad on a large scale and our tourist expenditures reached a record high level, the total net payments of dollars to foreigners for all these items did not, in any one year, reach as much as 30 percent of our dollar payments for imported goods. In most years the percentage was very much smaller than that.

Furthermore, with the exception of services, none of these items is a permanent source of supply of dollars to foreigners. There is a limit to the amount of gold which can be shipped. The United States already has more than half of the world's gold reserves and we do not want more. As for loans, they must eventually be paid back. They postpone the problem temporarily but when the time for settlement comes the amount of dollars which must be paid to us is greater because of the loan.

# OUR FOREIGN SALES ARE LIMITED BY OUR FOREIGN PURCHASES



Note: Figures are two-year averages of all commodities and services we sell to, or purchase from foreign countries.

## SUPPLY OF FARM LABOR AND INDUSTRIAL EMPLOYMENT

This chart brings out very clearly the fact that when industrial employment is lowest the supply of farm labor is highest. When people employed in industry are without work, many return to the farm in order that they may earn a living. Others move back to small towns and villages in rural areas and further increase the supply of labor available for farm work.

The following table shows the increase in indexes of the supply of labor in rural areas for the years 1929 to 1933, the drop of employment in manufacturing industries to a low ebb during the same period, and the subsequent reversal of these trends.

Year	Supply of farm labor <sup>1</sup>		Employment in manufacturing industries, United States <sup>2</sup>	Year	Supply of farm labor <sup>1</sup>		Employment in manufacturing industries, United States <sup>2</sup>
	United States	Southeast			United States	Southeast	
1929-----	103. 7	101. 6	104. 1	1933-----	213. 5	206. 7	58. 8
1930-----	116. 8	118. 0	96. 9	1934-----	154. 2	150. 1	80. 9
1931-----	158. 8	167. 7	80. 7	1935-----	138. 1	140. 5	82. 5
1932-----	193. 4	199. 7	68. 4	1936-----	114. 3	121. 7	84. 1

<sup>1</sup> Corrected for changes in demand. Normal=100.

<sup>2</sup> Averages 1923-25=100.

The labor supply for all farms more than doubled from 1929 to 1933 relative to the number of workers needed. The rate of increase was slightly faster in the southeast than in the country as a whole up until 1933, but the same general trends appeared in both cases. At the same time, employment in manufacturing industries dropped nearly 44 percent. Since 1933 industrial employment has picked up rapidly while the farm labor supply has dropped back toward normal.

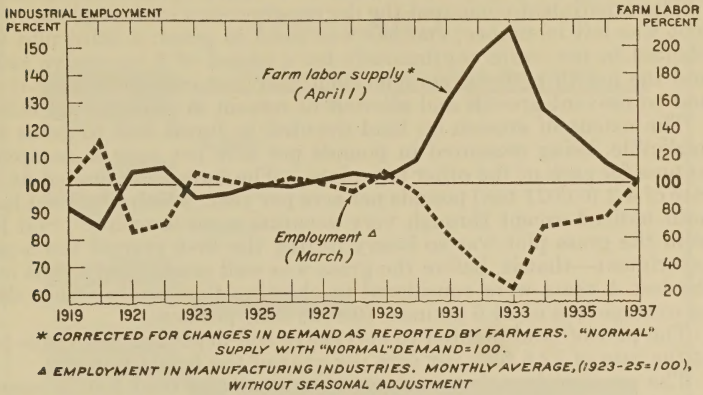
The farmer was affected by this situation in two ways: (1) The decrease in employment of industrial workers meant the loss of their earning power which results in a decrease in the buying power for agricultural products as well as other goods; (2) the return of these people to rural areas tended to stimulate an increase in the production of agricultural products in competition with the established farmers.

This tended to further upset the balance between the production of agricultural and industrial commodities and lowered the income of farmers.

During the period when the labor supply on the farm was greatest, the price of cotton and other agricultural commodities was lowest, production of agricultural products was not reduced in the same proportion as industrial production. For example, the automobile industry reduced production from 1929 to 1933 by 80 percent, while the prices were reduced by only 16 percent. The reduction in production of agricultural commodities during this same period was only 6 percent, while the prices dropped 63 percent.

# CHART NO. 14

## Supply of Farm Labor and Industrial Employment, Index Numbers, 1919 to Date





## EXHAUSTIVE FARMING DESTROYS THE LAND

The experiment, results of which are illustrated by this chart, was conducted at Statesville, N. C., on a restricted area of similar slope and physical characteristics and extended over a period of 5 years.

The experiment compared the degree of erosion on four plots. One plot was left in timber; another was sown to grass; a third plot was planted to row crops continuously for a period of 5 successive years; and the fourth plot was scraped each year just enough to keep down and to prevent growth and allowed to remain in unprotected fallow.

The extent of erosion on land devoted to forest and to grass was negligible, being measured in pounds per acre per year as compared to tons for each of the other two plots. The forest plot eroded at the rate of 4.2 (0.0021 ton) pounds per acre per year, which could not have been noticed except through very accurate measurements. Soil loss from the grass plot was so heavy during the first year of the 5-year experiment—that is, before the grass was well established—that only the last 4 years were considered in charting the results which show an average loss of 24.6 pounds, (0.0123 ton) per acre.

The plot of land planted to successive soil-depleting row crops lost at the rate of 22.6 tons per acre per year of the fertile top soil.

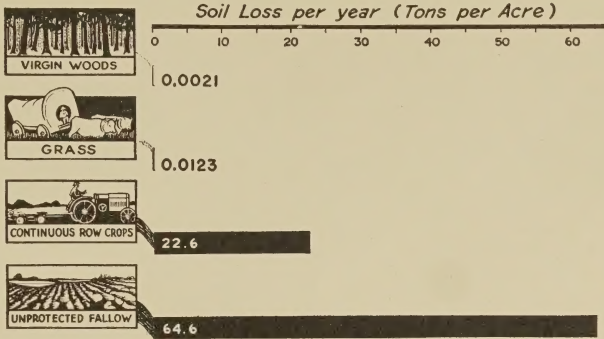
The greatest loss, however, was found on the land left in unprotected fallow. The land eroded at the rate of almost 65 tons of soil per acre per year, or a total of 325 tons of top soil on each acre for the 5-year period.

The results of this experiment show clearly the value of proper land use and the need for soil-conserving practices. Erosion is a force that is always at work, and often a day-to-day inspection fails to show any noticeable change.

During the past few years the South has made an effort to adjust the supply of American cotton to the demand and to maintain the fertility of cotton farms. To do this millions of acres that ordinarily would have grown cotton have been used for other purposes. The results of this Statesville, N. C., experiment should be of assistance to cotton farmers in making a decision as to the use that should be made of surplus cotton acres. The Agricultural Adjustment Administration makes payments for the seeding of permanent pastures, the growing of cover and green manure crops, the planting of forest trees, and stripcropping and other such soil-conserving practices.

## CHART NO. 15

# EXHAUSTIVE FARMING DESTROYS THE LAND



*5-year experiment - Statesville, N. C.*

